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| 10/511,010 | 10/12/2004 | Christoph Voss | PC10413US | 6911 |
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| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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|------------------------------|--------------------------------------|----------------------------------------|--|
| Office Action Summary | Application No. 10/511,010 | Applicant(s) VOSS, CHRISTOPH | |
| | Examiner Vu Q. Nguyen | Art Unit 3683 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Amendment

1. Applicant's submittal of an amendment on 02/08/2007 was entered, wherein:

Claim 14-27 are pending and

Claims 14-26 have been amended.

Specification

2. The disclosure is objected to because of the following informalities:

On page 3 of the amendment, in the replacement paragraph for paragraph [0008], 4th sentence, "housing step 19" should be --housing step **24**--.

On page 4 of the amendment, in the replacement paragraph for paragraph [0010], 1st sentence, "The second valve closure member 7 is configured as a sleeve bowl whose bowl bottom accommodates the first valve passage 5 cooperating with the second valve closure member 7" should be -- The second valve closure member **8** is configured as a sleeve bowl whose bowl bottom accommodates the first valve passage 5 cooperating with the second valve closure member **8**--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 3683

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 14-18, 21, 22, 24, 25, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by German Patent Document DE 19836493 (Obersteiner et al.). For the purposes of examination, the Examiner relies on U.S. Patent No. 6435210 (Obersteiner et al.) as an English equivalent and cites the English equivalent in the rest of this Office Action.

Regarding **claim 14**, Obersteiner et al. disclose in Fig. 2 an electromagnetic valve (15) for slip-controlled motor vehicle brake systems, comprising: a valve housing (9) and a first and a second valve closure member (8, 7) arranged in the valve housing (9) and being able, in a coaxial arrangement in the valve housing (9), to open or close a first and a second valve passage (3, 4), including a pressure fluid inlet (6) and a pressure fluid outlet (1) opening into the valve housing (9), with the first valve closure member (8) being able to open or close the first valve passage (3) positioned in the second valve closure member (7) in response to an electromagnetic excitation of a valve coil, and with the second valve closure member (7) opening the second valve passage (4) under the influence of a spring (10) exclusively in the open position of the first valve passage (3) so that pressure fluid prevailing in the pressure fluid inlet (2) propagates to the pressure fluid outlet (1) along a flow route inside the valve housing (9) in which the first and the second valve passage (3, 4) are positioned, wherein the spring (10) is placed outside the flow route (column 4, lines 2-9), the valve (15) comprising a bowl-shaped stop (14) fixedly secured in a housing step (column 4, lines 2-5) inside the valve housing (9) remote from the flow route (column 4, lines 2-9), the stop (14) having

Art Unit: 3683

a bottom wall and an opening through the bottom wall through which the second valve closure member (7) extends, the stop (14) circumscribing a portion of the second valve closure member (7) and forming an annular space between the stop (14) and the second valve closure member (7), the spring (10) being seated on the bottom wall in the annular space between the stop (14) and second valve closure member (7); **[claim 15]** the stop (14) is arranged above a transverse bore (2) opening into the valve housing (9) and being connected to the pressure fluid inlet (6); **[claim 16]** the stop (14) is provided at a housing step (column 4, lines 2-5) of the valve housing (9) that is positioned above the transverse bore (2) and whose inside diameter is adapted to the outside diameter of the stop (14); **[claim 17]** the stop (14) is configured as a sleeve-shaped bowl in whose interior an end of the spring (10) is supported on a bowl bottom, the stop (14) being positioned with its outside surface on a housing step (column 4, lines 2-5) disposed above the transverse bore (2) in the valve housing (9); **[claim 18]** the stop (14) has a bowl edge remote (as broadly interpreted) from the bowl bottom that is angled off in a radial outward direction and bears against the inside wall of the valve housing (9) (at the housing step); **[claim 21]** an end of the spring (10) remote from the bowl bottom bears against a bead (7') of the piston-shaped second valve closure member (7) extending through an opening in the bowl bottom towards a valve seat member that is press-fitted below the transverse bore (2) into the valve housing (9); **[claim 22]** the second valve closure member (7) is manufactured as a turned part from free-cutting steel (implied in column 4, lines 10-19); **[claim 24]** the valve housing (9) has a one-part design, and its open sleeve end remote from the second valve passage (4) is closed by a plug (13)

Art Unit: 3683

acting as a magnet core and being configured as a cold-heading or extruded part; **[claim 25]** the second valve passage (4) is provided in a disc-shaped or sleeve-shaped valve seat member being configured as a turned part or cold-heading part; **[claim 27]** the second valve closure member (7) further comprises a hollow bottom portion (as broadly recited) penetrated by at least one transverse bore (24') extending in a horizontal plane through the bottom portion.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 19, 20, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent Document DE 19836493 (Obersteiner et al.) in view of U.S. Patent No. 5810330 (Eith et al.).

Obersteiner et al. disclose an electromagnetic valve as applied to claims 14-18, 21, 22, 24, 25, and 27 above. Obersteiner et al. further disclose that **[claim 20]** the spring (10) extends vertically.

Obersteiner et al. do not disclose expressly that **[claim 19]** an annular chamber is provided between the outside periphery of the sleeve-shaped bowl and the inside wall of the sleeve-shaped valve housing, establishing a permanent pressure fluid connection between the pressure fluid inlet and a magnet armature chamber through pressure

Art Unit: 3683

compensating openings arranged in the valve housing and in the sleeve-shaped bowl; **[claim 23]** the stop and the valve housing consist of a deepdrawn thin sheet having pressure compensating openings, wherein the pressure compensating openings and the transverse bore are punched or impressed therein.

Eith et al. disclose an electromagnetic valve (10) comprising an annular chamber (26) provided between the outside periphery of a sleeve-shaped bowl (38) and the inside wall of a sleeve-shaped valve housing (21), establishing a permanent pressure fluid connection between a pressure fluid inlet (29) and a magnet armature chamber (31) through pressure compensating openings (27, 32, 39) arranged in the valve housing (21) and in the sleeve-shaped bowl (38); the sleeve-shaped bowl (38) and the valve housing (21) consist of a deepdrawn thin sheet having pressure compensating openings (27, 32, 39), wherein the pressure compensating openings (27, 32, 39) are punched or impressed therein.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the electromagnetic valve taught by Obersteiner et al. with pressure compensating openings as taught by Eith et al. The suggestion/motivation for doing so would have been to bathe the armature of the valve in fluid and ensure smooth movement of the armature, and to allow for improved pressure compensation and better fluid communication throughout the valve. Furthermore, it would have been obvious to a person of ordinary skill in the art to modify the electromagnetic valve taught by Obersteiner et al. with a valve housing consisting of a deepdrawn thin sheet as taught

Art Unit: 3683

by Eith et al. The suggestion/motivation for doing so would have been to allow for easier manufacture of parts and a more unitary construction and assembly of the valve.

7. Claims 14-18, 21, 22, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent Document DE 10010734 (Holl et al.) in view of German Patent Document DE 19836493 (Obersteiner et al.).

Regarding **claim 14**, Holl et al. disclose in Fig. 4 an electromagnetic valve for slip-controlled motor vehicle brake systems, comprising: a valve housing (1b) and a first and a second valve closure member (7, 8) arranged in the valve housing (1b) and being able, in a coaxial arrangement in the valve housing (1b), to open or close a first and a second valve passage (5, 9), including a pressure fluid inlet (13) and a pressure fluid outlet (6) opening into the valve housing (1b), with the first valve closure member (7) being able to open or close the first valve passage (5) positioned in the second valve closure member (8) in response to an electromagnetic excitation of a valve coil (27), and with the second valve closure member (8) opening the second valve passage (9) under the influence of a spring (17) exclusively in the open position of the first valve passage (5) so that pressure fluid prevailing in the pressure fluid inlet (13) propagates to the pressure fluid outlet (6) along a flow route inside the valve housing (1b) in which the first and the second valve passage (5, 9) are positioned; **[claim 21]** an end of the spring (17) bears against a bead of the piston-shaped second valve closure member (8) extending towards a valve seat member that is press-fitted below a transverse bore (21) into the valve housing (1b); **[claim 22]** the second valve closure member (8) is

Art Unit: 3683

manufactured as a turned part from free-cutting steel; **[claim 24]** the valve housing (1b) has a one-part design, and its open sleeve end remote from the second valve passage (9) is closed by a plug (14) acting as a magnet core and being configured as a cold-heading or extruded part; **[claim 25]** the second valve passage (9) is provided in a disc-shaped or sleeve-shaped valve seat member being configured as a turned part or cold-heading part; **[claim 26]** the second valve closure member (8) is designed as a sleeve bowl made in a deepdrawing operation, the bowl bottom accommodating the first valve passage (5) cooperating with the first valve closure member (7), and in that close to a bowl bottom the peripheral surface of the second valve closure member (8) is penetrated by transverse bores (18) which are positioned in the horizontal plane of a transverse bore (21) connected to the pressure fluid inlet (13) to form a flow route with least possible rerouting, said transverse bore (21) extending through the valve housing (1b) in a horizontal direction; **[claim 27]** the second valve closure member (8) further comprises a hollow bottom portion penetrated by at least one transverse bore (18) extending in a horizontal plane through the bottom portion.

Regarding **claim 14**, Holl et al. do not disclose expressly that the spring (17) is placed outside the flow route, the valve comprising a bowl-shaped stop fixedly secured in a housing step inside the valve housing (1b) remote from the flow route, the stop having a bottom wall and an opening through the bottom wall through which the second valve closure member (8) extends, the stop circumscribing a portion of the second valve closure member (8) and forming an annular space between the stop and the second valve closure member (8), the spring (17) being seated on the bottom wall in the

Art Unit: 3683

annular space between the stop and second valve closure member (8). Furthermore, because Holl et al. do not disclose a stop for the spring (17), the details regarding the stop recited in **claims 15-18** are not disclosed by Holl et al.

Obersteiner et al. disclose in Fig. 2 an electromagnetic valve (15) comprising a spring (10) placed outside a flow route (column 4, lines 2-9), the valve (15) comprising a bowl-shaped stop (14) fixedly secured in a housing step (column 4, lines 2-5) inside a valve housing (9) remote from the flow route (column 4, lines 2-9), the stop (14) having a bottom wall and an opening through the bottom wall through which a second valve closure member (7) extends, the stop (14) circumscribing a portion of the second valve closure member (7) and forming an annular space between the stop (14) and the second valve closure member (7), the spring (10) being seated on the bottom wall in the annular space between the stop (14) and second valve closure member (7). For further details regarding the stop (14), see the claim rejections above.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the spring of the electromagnetic valve taught by Holl et al. with a stop and housing step so that the spring is placed outside the flow route as taught by Obersteiner et al. The suggestion/motivation for doing so would have been so that the flow of fluid from the fluid pressure inlet to the fluid pressure outlet is not hindered or obstructed in any way, as taught by Obersteiner et al. (column 3, lines 18-35; column 4, lines 2-9), thereby increasing efficiency of the valve.

Art Unit: 3683

8. Claims 19, 20, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent Document DE 10010734 (Holl et al.) in view of German Patent Document DE 19836493 (Obersteiner et al.) as applied to claims 14-18, 21, 22, and 24-27 above, and further in view of U.S. Patent No. 5810330 (Eith et al.).

Holl et al. and Obersteiner et al. disclose an electromagnetic valve and a spring arrangement remote from the flow route respectively, as applied to claims 14-18, 21, 22, and 24-27 above. Holl et al. further disclose that **[claim 20]** the spring (17) extends vertically; **[claim 23]** the valve housing (1b) consists of a deepdrawn thin sheet wherein the transverse bore (21) is punched or impressed therein.

Holl et al. or Obersteiner et al. do not disclose expressly that **[claim 19]** an annular chamber is provided between the outside periphery of the sleeve-shaped bowl and the inside wall of the sleeve-shaped valve housing, establishing a permanent pressure fluid connection between the pressure fluid inlet and a magnet armature chamber through pressure compensating openings arranged in the valve housing and in the sleeve-shaped bowl; **[claim 23]** the stop consists of a deepdrawn thin sheet having pressure compensating openings, wherein the pressure compensating openings are punched or impressed therein.

Eith et al. disclose an electromagnetic valve (10) comprising an annular chamber (26) provided between the outside periphery of a sleeve-shaped bowl (38) and the inside wall of a sleeve-shaped valve housing (21), establishing a permanent pressure fluid connection between a pressure fluid inlet (29) and a magnet armature chamber (31) through pressure compensating openings (27, 32, 39) arranged in the valve

Art Unit: 3683

housing (21) and in the sleeve-shaped bowl (38); the sleeve-shaped bowl (38) and the valve housing (21) consist of a deepdrawn thin sheet having pressure compensating openings (27, 32, 39), wherein the pressure compensating openings (27, 32, 39) are punched or impressed therein.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to further modify the electromagnetic valve taught by Holl et al. and the stop taught by Obersteiner et al. with pressure compensating openings as taught by Eith et al. The suggestion/motivation for doing so would have been to bathe the armature of the valve in fluid and ensure smooth movement of the armature, and to allow for improved pressure compensation and better fluid communication throughout the valve.

Response to Arguments

9. Applicant's arguments with respect to claims 14-27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 3683

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Q. Nguyen whose telephone number is (571) 272-7921. The examiner can normally be reached on Monday through Friday, 10:30 AM to 7:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3683

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VQN

Robert A. Siconolfi 4/7/07
ROBERT A. SICONOLFI
PATENT EXAMINER